

BRODSKIY, A.Ya.; FRIDMAN, A.M.; MULIN, N.M.; LEYKIN, I.M.; ROSHCHINA, A.A.

Low-alloy ribbed reinforcing steel with large diameters (40 ~~to~~ 90 mm.).
Bet. i zhel.-bet. 8 no.7:303-306 JI '62. (MIRA 15:7)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'nykh konstruksiy Akademii stroitel'stva i arkhitektury SSSR (for Brodskiy, Fridman).
2. Nauchno-issledovatel'skiy institut betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Mulin).
3. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Leykin, Roshchina).
(Concrete reinforcement—Testing)

ROSHCHINA, A. A.

.R93095

NASH OPYT VYRASHCHIVANIYA TELYAT V KOLKHOZE. MOSKVA, IZD-VO ZNANIYE, 1952.
21p. ILLUS. (VSESOYUZHNOYE OBSHCHESTVO PO RASPROSTRANENIYU POLITICHESKIKH I
NAUCHNYKH ZNANIY)

ROSLAVTSEV, A.V.

On the collections of scientific works published by several
eye clinics. Vest. oft. 76 no.3:87-89 My-Je '63.

(MIRA 17:2)

1. Predsedatel' problemnoy komissii "Vazhneyshiye glaznyye
zabolevaniya" Uchenogo meditsinskogo soveta Ministerstva
zdravookhraneniya RSFSR.

LEYKIN, I.M.; LEBEDEV, Yu.I.; ANDREYEV, I.I.; BEDA, N.N.; Prinimali uchastiy: LIVSHITS, G.L.; TERENT'YEVA, Ya.K.; FILONOV, V.G.; GONCHAROV, I.A.; NAFTALOVICH, S.M.; KUPRIKOV, P.Z.; ABKINA, R.I.; ROSHCHINA, A.A.; LUPYAKOV, A.G.

Steel of the 18G2-grade. Sbor. trud TSNIICHM no.35:92-101 '63.

(MIRA 17:2)

ROSHCHINA, A. A.

Agriculture

Our experience in raising calves in the
agricultural cooperatives Moskva, "Znanie", 1952

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

LEYKIN, I.M.; UTKIN, V.M.; ROSHCHINA, A.A.

The 28GS2 reinforcement steel. Sbor.trud.TSMICHM no.27:10-25
'62. (MIRA 15:8)
(Steel--Metallurgy) (Concrete reinforcement)

LEYKIN, I.M., UTKIN, V.M., ROSHCHINA, A.A.

28GS2 steel for reinforcing concrete.

SPECIAL STEELS AND ALLOYS (SPETSIAL'NIYE STALI I SPLAVY), Collection of Studies, Issue 27, 240 pages, published by the State Scientific and Technical Publishing House for Ferrous and Non-Ferrous Metallurgy, Moscow, USSR, 1962.

Card 7/8

GULYAYEV, A.P., doktor tekhn.nauk; LEYKIN, I.M., kand.tekhn.nauk;
ROSHCHINA, A.A., inzh.; UTKIN, V.M., inzh.

Highly resistant steel for the reinforcement of prestressed
reinforced concrete construction. Stal' 21 no.10:939-944 0 '61.
(MIRA 14:10)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii.

(Concrete reinforcement)

RUBIN, B.A.; LOGINOVA, L.N.; ROSHCHINA, A.M.

Terminal oxidation stages in the leaves of semisubmerged plants.
Biokhimiia 30 no.4:681-686 J1-Ag '65. (MIRA 18:8)

1. Biologo-pochvennyy fakul'tet Gosudarstvennogo universiteta
imeni M.V. Lomonosova, Moskva.

ROSHCHINA, A.P.

Practical work with climatological maps in the sixth grade
geography course. Geog.v shkole 22 no.5:54-59 S-0 '59.
(MIRA 13:2)
(Climatology--Charts, diagrams, etc.)

ROSHCHINA, G.A., Cand Med Sci—(disc: "Pericarditis in children."
Mos, 1958, 10 pp (Second Mos State Med Inst in N.I. Pirogov),
200 copies (ML, 25-52, 119)

-118-

RYABOV, S.I.; SHCHERBA, M.M.; ROSHCHINA, G.M.

Pathogenesis of anemia in rheumatoid arthritis. Terap. arkh. 35
no.5:82-86 My'63 (MIRA 16:12)

1. Iz kafedry fakul'tetskoy terapii (zav. - zasluzhennyy deyatel'
nauki prof. T.S.Istamanova) i kafedry propedvtiki vnutrennikh
bolezney (zav. - prof. M.L.Shcherba) I Leningradskogo meditsind-
go instituta imeni akademika I.P.Pavlova.

BRIDEN, A.M.; LASHCHINA, G.M.

Change in the appetite for water, glucose, sodium and potassium
in rats following inhibition of sodium pump by administering
strophantidin E. Dokl. AN SSSR 165 no.5:1211-1214 D '65.
(MIRA 19:1)

1. Institut Fiziologii im. I.P.Favlova AN SSSR. Submitted
January 18, 1965.

CHERNYAVSKAYA, I.A.; NOSENCHINA, G.P.

Molecular scattering of light and the rotational mobility of
molecules of carboxylic acids and their solutions. Vest. IGU
19 no.16:26-29 '64. (MIRA 17:11)

GOLUBOVSKIY, I.Yu.; ROSHCHINA, G.P.

Indicatrices of light scattering in demixing and nondemixing solutions.
Ukr. fiz. zhur. 9 no.5:531-536 Ky '64. (MIRA 17:9)

1. Kiyevskiy gosudarstvennyy universitet.

ROSHCHINA, G.P.; SAMKOVA, A.B.

Use of the light scattering method in studying fluctuations in
nonaqueous electrolyte solutions. Ukr. fiz. zhur. 9 no.5:512-521
Ily '64. (MIRA 17:9)

1. Kiyevskiy gosudarstvennyy universitet.

ROSHCHINA, G.P. [Roshchina, H.P.]; ISHCENKO, E.D.

Structure of liquid systems with a eutectic diagram of state. Part 3. Scattering of light in liquid eutectic systems. Ukr. fiz. zhur. 9 no.3:334-341 Mr '64.

(MIRA 17:9)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

ROSHCHINA, G.P.; ISKCHENKO, E.D.

Intensity of the isotropic part of scattered light in mutual
solutions of n-paraffins and n-alcohols. Vest. IGU 19 no.16:
60-64 '64. (MIRA 17:11)

The influence of temperature on the composition and intensity of Raman scattering in liquids. M. P. Vuks, G. L. Roshchina, and D. E. Ovsienko (Acad. Sci., Ukraine S.S.R.). *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 12, 601-7 (1948).--The Raman scattering of the depolarized radiation has been studied with benzene (temp. of soln. 20 and 80°), nitrobenzene (10, 28, 105, 205°), and salol (10, 30, 50, 140, 230°) with temp. of the filter ranging from 100 to 300°, corresponding to effective half widths of 0.1-9 cm.⁻¹. The ratios of increase in brightness at 0.55 cm.⁻¹ are benzene 80°/20° = 18%, nitrobenzene 205°/10° = 75%, salol 230°/10° = 400%. The results for the shift of the av. frequency of the wing with increasing temp. are contrary to the formula of Leontovich (*C.A.* 36, 4116°).
S. Pakswar

ROSHCHINA, G. P.

USSR/Physics - Solid State Physics Nov 53

"Conference on the Liquid State of Matter, Held 28-30 May 1953 at Kiev by the Academy of Sciences, Ukrainian SSR, and Kiev State University im T. G. Shevchenko," S. D. Ravikovich, G. P. Roshchina and A. F. Skryshevskiy

Usp Fiz Nauk, Vol 51, No 3, pp 393-405

Summarize reports by the following: V. I. Danilov, on scattering of x-rays in liquids; A. F. Skryshevskiy, on x-ray study of solns of KOH, NaOH, LiOH, LiCl, and H₂SO₄; Ye. A. Poray-Koshits, on integral analysis of intensity curves; B. V. Derjagin, 272T90

Ye. G. Shvidkovskiy, O. Ya. Samoylov et al. on x-ray studies of liquid structure; A. Z. Golik, on characteristics of molecular structure of liquids; I. V. Radchenko, on modeling of liquids; F. K. Shestakovich, on new liquid models and influence of central and dipole forces on close ordering; A. Z. Golik and his associates S. D. Ravikovich, A. V. Orishchenko, V. P. Solomko, and N. A. Ryndich, on viscosity and density of matter in the liquid state; V. M. Chulanovskiy and D. S. Kamenetskaya, on the influence of molecules' size and intermolecular intensity on viscosity coeff; A. P. Brynza, on thermo-diffusion in binary systems; S. S. Urazovskiy, presence of grouping of identical atoms; A. R. Regel', on relation between electrical properties and structure of liquids; M. F. Vuks, on light-dispersion method for studying liquids' structure. 272T90

GOLIK, A.Z., doktor fiziko-matematicheskikh nauk, otvetstvennyy redaktor;
RAVIKOVICH, S.D., kandidat fiziko-matematicheskikh nauk, redaktor;
~~ROSHCHINA, G.P.~~, kandidat fiziko-matematicheskikh nauk, redaktor;
SKRYSHEVSKIY, A.F., kandidat fiziko-matematicheskikh nauk, redaktor.

[Structure and physical properties of matter in liquid state;
papers of a conference held in Kiev, May 28-30, 1953] Stroenie i
fizicheskie svoistva veshchestva v zhidkom sostoianii; materialy
soveshchaniia, sostoiavshegosia v Kieve 28-30 maia 1953 g. [Kiev]
Izd-vo Kievskogo gos. univ. im. T.G.Shevchenko, 1954. 203 p.
(MIRA 9:8)

1. Akademiya nauk URSR, Kiyev
(Liquids)

ROSHCHINA, G. P. and DADENKOVA, M. N.

"Investigation of the Integral Intensity of the Isotropic and Anisotropic Portions of Rayleigh Scattering of Light in Binary Liquid Solutions", a paper presented at the second conference on the Liquid State of Matter, Kiev, 30 May to 3 June 1955, Usp. Fiz. Nauk, April 1955

ROSHCHINA, G. P.

USSR/Physical Chemistry - Liquids and Amorphous Bodies. Gases, B-6

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 608, 6

Author: Roshchina, G. P.

Institution: None

Title: Investigation of the Effects of Temperature on Scattering of Light in Liquids

Original
Periodical: Nauk. zap. Kiivs'k. un-t, 1955, 14, No 8, 171-182

Abstract: Using equipment similar to that previously described (Vuka M. V., ~~570~~ AN SSSR, ser. fiz., 1941, 5, 150) an investigation was made of the effects of temperature on the scattering of light in salol (230, 140, 70, 30, 10), nitrobenzene (205, 105, 26, 10), phenol (180, 100, 30), carbon disulfide (40, 10) and benzene (80, 20). In parentheses are shown temperatures in ° C for which were recorded the curves of correlation between transmittance of a resonance filter and temperature. It was found that brilliance of the wing increases with increasing temperature of the liquid for all

Card 1/2

USSR/Physical Chemistry - Liquids and Amorphous Bodies. Gases. B-6

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 50976

Abstract: the investigated liquids within the studied temperature intervals. At the same time there was observed also a change in the distribution of the intensity of the wing, namely the outer portion of the wing changes little while its central part increases appreciably on heating of the liquid which results in a shift of mean frequency toward the central line. In liquids with strongly anisotropic molecules where scattering at density fluctuations constitutes a small percentage of the total brilliancy there can be observed an unusual progression course of total brilliancy with temperature, for instance in the case of nitrobenzene and salol. In the former brilliancy decreases appreciably with temperature while in the latter it remains practically unchanged.

Card 2/2

Roshchina, G. P.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 116 - 7/30

Authors : Golik, A. Z.; Orishchenko, A. V.; Ravikovich, S. D.; Solomko, V. P.;
Roshchina, G. P.; and Shimanskiy, Yu. I.

Title : Viscosity, density and critical temperatures of alcohol solutions in
monocarboxylic acids

Periodical : Ukr. khim. zhur. 21/3, 318-326, June 1955

Abstract : The viscosity, density and critical temperatures of alcohol solutions were investigated in monocarboxylic acids in which the chemical esterification reaction usually takes place. The general laws governing the concentration and thermal dependence of the characteristics mentioned and the laws governing the activation energy of the viscous flow and specific volumes were established. It is shown that in the case of solutions, the components of which react intensively between themselves, and that the concentration and thermal dependences are also subject to other more complicated laws. Nine Russian and USSR references (1877-1955). Graphs.

Institution : Acad. of Sc., Ukr. SSR., The L. V. Pisarzhevskiy Inst. of Phys. Chem. and the T. G. Shevchenko State Univ., Kiev

Submitted : December 16, 1954

Roshchina, G. P.

✓ Viscosities and critical temperatures of aqueous solutions of alcohols and monocarboxylic acids. A. Z. Golik, A. V. Orishchenko, S. D. Ruykovich, G. P. Roshchina, V. P. Solonko, and Yu. I. Shimanskii (T. G. Shevchenko State Univ., Kiev). *Ukrain. Khim. Zhur.* 21, 180-3 (1955) (in Russian); cf. C.A. 48, 4011c. Crit. temp. varies linearly with percentage of H₂O for EtOH, PrOH, and HOAc solns. For PrCO₂H solns. there is a min. at 26% H₂O. Viscosity-concn. curves show max. that decrease with rising temps. as H-bonded structures are broken down. Graphs are given. Graphs are also given for A and B/R in the equation $\text{viscosity} = A \exp(B/RT)$ against percentage H₂O. B/R has a max. and A a min. John H. Scott

CH

5

11/11/57

ROSHCHINA, G.P. [Roshchina, H.P.]; DADENKOVA, M.M.

Intensity of the isotropic light dispersion in alcohol solutions.
Nauk povid. KDU no.1:47-48 '56. (MIRA 11:4)
(Alcohols) (Light--Scattering)

ROSHCHINA, G.P. [Roshchina, H.P.]

Molecular dispersion of light in carboxylic acid solutions. Nauk
povid. KDU no.1:48-49 '56. (MIRA 11:4)
(Acids, Organic) (Light--Scattering)

ROSHCHINA, G.P.

K-5

USSR/Optics - Physical Optics.

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7735

Author : Roshchina, Dadentova, Tarapon.

Inst :

Title : Investigation of Molecular Scattering of Light in Alcohol Solutions.

Orig Pub : Woi. fiz. zh., 1956, 1, No 2, 183-192

Abstract : The influence of the temperature and concentration on the intensity of the isotropic and anisotropic portions of the Rayleigh scattering was investigated for binary solutions of alcohols (ethyl and butyl) both in each other, as well as in solvents having in the liquid state a molecular structure that is different from that of alcohols (glycerin, acetone, benzol, CCl_4 , and dioxane). Use was made of the classification of solutions, resulting from data of X-ray diffraction, according to which in first approximation the solutions can be separated into

Card 1/3

- 36 -

USSR/Optics - Physical Optics.

K-5

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7735

immiscibility of the components is determined by the character of the intermolecular interaction between the different particles of the solution components, and its intensity. If the fundamental character of the interaction between the particles of the solution is similar, the immiscibility can be caused by the difference in the dimension of the molecules.

Card 3/3

- 38 -

ROSHCHINA, G. P.

23
H.
The intensity of molecular light scattering and its connection with neighboring arrangements in liquids. M. M. Dudenkova and G. P. Roshchina. *Nauk. Zapiski Kirovsk. Derzhav. Univ. im. T. S. Shvachenko* 15, No. 9, Zbirnik Fiz. Fak. No. 5, 77-84 (1958).—In order to bring out more accurately the relation of the anisotropic and isotropic parts of the Rayleigh scattering to the order of the adjacent mols. in liquids, the influence of the temp. was studied on the compound light scattering for one-component liquids (MeOH, EtOH, PrOH, BuOH, glycerol, hexane (I), heptane, octane, PhCl (II), H₂O, CCl₄, toluene, aniline, CHCl₃, and CHBr₃), and the influence of the temp. and the concn. on the intensity of the scattered light was also studied for binary mixts. of such liquids. For liquids which have a similar d. of mols. in the solid state and which show the same type of intramol. bonding, e.g. the alcs. or the paraffins, the curves which show the intensity of the isotropic and anisotropic scattering as a function of the temp. look quite similar to each other; the intensity of the isotropic scattering for these groups of liquids is a function of the critical parameters which characterize the intramol. interactions. On the basis of the measurements of the intensities of isotropic scattering, the isothermic compressibility of these liquids is

1/2

DADENKOVA, M.M. ROSHCHINA, G.P.

called. It was discovered that there is an influence of the
arrangement of the molecules on the intensity of the
anisotropic scattering of light. The results of the
liquids are given in the table.

The authors are grateful to the
Ministry of Science of the USSR for the
financial support of the work.
The authors are also grateful to the
Ministry of Science of the USSR for the
financial support of the work.

ROSHCHINA, G. P.

USSR/Atomic and Molecular Physics - Liquids, D-8

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34465

Author: Roshchina, G. P., Ryndich, N. A., Shimanskiy, Yu. I.

Institution: None

Title: Conference on the Liquid State of Matter

Original Periodical: Usp. fiz. nauk, 1956, 58, No 4, 749-756

Abstract: The second conference on the liquid state of matter, held in Kiev from 30 May through 3 June 1955 under the auspices of the Kiev State University imeni T. G. Shevchenko.

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- 1 -

ROSHCHINA, G.P.; SHIMANSKIY, Yu.I.

Third conference on the liquid state of matter. Ukr.fiz.zhur. 2
no.3:292-295 J1-S '57. (MIRA 10:10)
(Liquids)

Roshchina, G.P.

21-5-8/26

AUTHORS:

Roshchina, G.P. (Roshchyna, H.P.), Golik, A.Z. (Holyk, O.Z.)

TITLE:

Molecular Scattering of Light in Isoviscous Liquids (Molekulyarnoye rasseyaniye sveta v izov'yazkostnykh zhidkostyakh)

PERIODICAL:

Dopovidi Akademii Nauk Ukrainy, 1957, Nr 5, pp. 457-460 (USSR)

ABSTRACT:

The authors investigated molecular scattering of light in isoviscous liquid in order to ascertain the connection between the characteristics of scattered light and the structure of the solutions. Isoviscous liquids were first discovered by one of the authors, A.Z. Golik (Ref.1). These liquids have equal critical temperatures and similar curves for the temperature dependence of viscosity. The investigation of the structure of these liquids with the aid of X-ray scattering shows that they possess the same structure. The liquids studied in this research were isoviscous solutions of n-paraffin and of n-alcohols. The following results were obtained with these liquids. In the case of n-paraffin solutions, isoviscous with n-heptane, there is a coincidence of the temperature-dependence curves of the intensity of the isotropic part of scattered light. For solutions, isoviscous with ethyl alcohol and propyl alcohol, such an agreement of the intensity curves is

Card 1/2

Molecular Scattering of Light in Isoviscous Liquids

21-5-8/26

not always observed. The intensities of the anisotropic parts of scattered light do not coincide for isoviscous liquids (except for heptane and an isoviscous solution of 50.6% of octane in hexane). On the basis of these investigations the coefficients were computed for the isothermal compressibility of isoviscous liquids. Isoviscous liquids were shown to have the same coefficients of isothermal compressibility. The article contains 2 figures, 2 tables and 4 Slavic references.

ASSOCIATION: Kiev State University (Kyivs'kyi derzhavnyi universytet)

PRESENTED: By V.Ye. Lashkarev (Lashkar'ov), Member of the AN Ukrainian SSR

SUBMITTED: 21 December 1956

AVAILABLE: Library of Congress

Card 2/2

SOV/58-59-8-18976

Translated from: Referativnyy Zhurnal Fizika, 1959, Nr 8, p 273 (USSR)

AUTHORS: Dadenkova, M.N., Roshchina, G.P.

TITLE: Light Scattering in Solutions Consisting of Components of Different Molecular Structure

PERIODICAL: Nauchn. tr. Ukr. s.-kh. akad., 1957, Vol 9, pp 489-493

ABSTRACT: The concentration and temperature dependences of molecular scattering were studied in the following nine binary solutions:
 $C_2H_5OH - C_6H_6$, $C_4H_9OH - C_6H_6$, $C_2H_5OH - CCl_4$, $C_4H_9OH - CCl_4$,
 $C_2H_5OH - C_4H_9OH$, $C_2H_5OH - C_3H_5(OH)_3$, $C_2H_5OH - C_3H_2O$, $C_4H_9OH -$
 $- C_3H_2O$ and $C_4H_9OH - C_2H_5(OH)_3$.

The measurements were carried out at temperatures of 20°, 50° and 75°C. The scattered light was observed at an angle of 90° to the incident ray through a polarization prism in its two different orientations. In one orientation a fraction (6/13) of the anisotropic part of the molecular scattering traversed the prism. In the other position the remaining fraction of anisotropic scattering was obtained, as well as isotropic

Card 1/2

SOV/58-59-8-18976

Light Scattering in Solutions Consisting of Components of Different Molecular Structure

scattering including density and concentration scattering (CS). The authors were particularly interested in CS, which, in their opinion, can serve as a measure of the immiscibility of the solution components. The magnitude of CS was determined for the series of solutions from the deviation of the concentration dependence of isotropic-scattering intensity from a straight line. An estimate of CS was made for the above-mentioned solutions. In particular, it was found that solutions of ethanol (1) in butanol (2) do not give rise to CS. On the other hand, CS is observed in solutions of (1) and (2) in benzene and glycerine.

Card 2/2

ROSHCHINA, G.P. [Roshchyna, H.P.]

Investigating solutions of lithium chloride in n-alcohols by
means of molecular scattering of light. Visnyk Kyiv.un.no.2.
Ser.fiz.ta khim. no.1:53-56 '59. (MIRA 14:8)
(Lithium chloride) (Light—Scattering)

ROSHCHINA, G.P. [Roshchyna, H.P.]

Investigating the distribution of intensity in the wing of the
Rayleigh curve and studying the time of relaxation of
anisotropic carboxylic acids and their solutions in acetone.
Visnyk Kyiv.un.2.Ser.fiz.ta khim. no.1:57-60 '59. (MIRA 14:8)
(Acids)

ROSHCHINA, G.P. [Roshchyna, H.P.]; ISHCHENKO, B.D.

Ultrasound velocity in and compressibility of certain nonaqueous solutions of electrolytes. Ukr. fiz. zhur. 4 no.2:268-272 Mr-Apr '59. (MIRA 13:1)

1. Kiyevskiy gosudarstvennyy universitet.
(Electrolytes)

5/158/63/000/001/064/120
A160/A101

AUTHOR: Roshchina, G. P.

TITLE: The molecular light scattering and the structure of nonelectrolyte solutions

PERIODICAL: Referativnyi zhurnal, Fizika, no. 1, 1963, 66 - 67, abstract 1D470
("Nauk.zap. Kiivs'k. un-t", no. 3, 1959, 18, 93 - 104, Ukrainian;
summary in Russian)

TEXT: Presented and discussed are the results of investigations of the molecular light scattering in various-type liquids and solutions. The investigations were carried out to define more accurately the linkage between the single characteristics of the scattered light and the solution structure, and also between other physical properties of the latter. The objects of investigation were selected by the similarity characteristic of their structure in liquid state, and mainly were used molecularly miscible, molecularly non-miscible or microemulsion solutions, as well as solutions whose components chemically interact between one another. Investigations were conducted of the effect of the temperature and the

Card 1/3

S/058/63/000/001/064/120
A160/A101

The molecular light scattering...

concentration on the intensity of the isotropic and anisotropic parts of Rayleigh's light scattering. It is shown that the intensity of the density scattering, and also of the isothermal and adiabatic compressibility increases, for a large number of liquids and some solutions, with the temperature by the exponential law. Discussed are the results of investigations of molecularly miscible solutions composed of components with an analogous structure. For these solutions, the simplest regularities were found regarding the behavior of the scattered light intensity. In these solutions, a light scattering on the concentration fluctuations is absent and solutions are classified as molecularly miscible ones. The light scattering in isoviscous liquids reveals that the intensity of the density scattering is apparently determined by a short-range order in the liquid and the density. The results of an investigation of microemulsion solutions are discussed. The magnitude of the intensity of concentration scattering and its change with the temperature is evaluated. The last magnitude may be considered as the extent of the molecular non-miscibility of the solution components. Discussed are the results of an investigation of solutions whose components possess a different structure, and it is shown that the molecular miscibility of the components mainly depends on the character and the intensity of

Card 2/3

"The molecular light scattering...

8/058/63/000/001/064/120
A160/A101

the intermolecular interaction between the various-kind solution parts. There are 22 references.

[Abstracter's note: Complete translation]

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Card 3/3

ROSHCHINA, G.P.

30

PHASE I BOOK EXPLOITATION SOV/5469

Soveshchaniye po kriticheskim yavleniyam i flyuktuatsiyam v rastvorakh. Moscow, 1960.

Kriticheskiye yavleniya i flyuktuatsii v rastvorakh; trudy soveshchaniya, yanvar' 1960 g. (Critical Phenomena and Fluctuations in Solutions; Transactions of the Conference, January 1960) Moscow, Izd-vo AN SSSR, 1960. 190 p. 2,500 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk. Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova. Khimicheskii fakul'tet.

Responsible Ed.: M. I. Shakhparonov, Doctor of Chemical Sciences, Professor; Ed. of Publishing House: E. S. Dragunov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE : This collection of articles is intended for scientific personnel concerned with chemistry, physics, and heat power engineering.
Card 1/9

30

Critical Phenomena and Fluctuations

SOV/5469

COVERAGE: The book contains 24 of the 26 reports read at the Conference on Critical Phenomena and Fluctuations in Solutions organized by the Chemical Division of Moscow State University, January 26-28, 1960. The reports contain results of investigations carried out in recent years by Soviet physicists, chemists, and heat power engineers. The Organizing Committee of the Conference was composed of Professor Kh. I. Amirkhanov, A. Z. Golik, I. R. Krichevskiy (Chairman), V. K. Semenchenko, A. V. Storonkin, I. Z. Fisher, and M. I. Shakhparonov (Deputy Chairman). References accompany individual articles.

TABLE OF CONTENTS:

Foreword

3

Amirkhanov, Kh. I., A. M. Kerimov, and B. G. Alibekov [Laboratoriya molekulyarnoy fiziki, Dagestanskiy filial AN SSSR -- Laboratory of Molecular Physics, Dagestan Branch, AS USSR]. Thermophysical Properties of Matter at Critical Temperature

5

Card 2/9

30

Critical Phenomena and Fluctuations

SOV/5469

Akhadov, Ya. Yu., and M. I. Shakhparonov [Laboratoriya fiziko-khimii rastvorov, Khimicheskiy fakul'tet, Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova -- Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Dielectric Properties of Solutions in a Superhigh Frequency Field and Concentration Fluctuations

14

Beridze, D. K., and M. I. Shakhparonov [Laboratory of Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Light Scattering in Solutions Having a Critical Stratification Point

21

Vuko, M. F., and L. I. Lisnyanskiy [Laboratoriya molekulyarnoy optiki, Fizicheskiy fakul'tet, Leningradskiy gosudarstvennyy universitet im. A. A. Zhdanova -- Laboratory of Molecular Optics, Physics Division, Leningrad State University imeni A. A. Zhdanov]. Intermolecular Interaction and Light Scattering in Solutions of Pyridine and α - Picoline in Water

27

Card 3/9

Critical Phenomena and Fluctuations

SOV/5469

Zatsepina, L. P., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Rayleigh Light Scattering in Nitrobenzene -- Cyclohexane and Ethyl Alcohol -
- Diethylamine Solutions

32

Kasimov, R. M., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Dielectric Properties of Solutions in Electromagnetic Fields of the Millimetric Band and Concentration Fluctuations

37

Krichevskiy, I. R., and N. Ye. Khazanova [Laboratoriya vysokikh davleniy, GIAP -- Laboratory of High-Pressure [Studies], Moscow State Design and Planning Scientific Research Institute of the Nitrogen Industry]. Diffusion of Liquid and Gaseous Solutions in the Critical Region

45

Krichevskiy, I. R., and Yu. V. Tsekhanskaya [Laboratory of

Card 4/9

Critical Phenomena and Fluctuations

Sov/5469

High-Pressure [Studies], GIAP]. Kinetics of Heterogeneous Processes in the Critical Region

54

Krichevskiy, I. R., N. Ye. Khazanova, and L. R. Linshits [Laboratory of High Pressure [Studies], GIAP]. Liquid-Vapor Equilibrium in the Critical Region of Liquid-System Stratification

61

Lomova, N. N., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Permittivity and Molecular Structure of Solutions

73

Lanshina, L. V., and M. I. Shakhparonov [Laboratory of the Physical Chemistry of Solutions, Chemistry Division, Moscow State University imeni M. V. Lomonosov]. Thin Structure of the Line of Rayleigh Light Scattering in Solutions

77

Mokhov, N. V., and Ya. M. Labkovskiy [Kafedra eksperimental'noy fiziki, Dnepropetrovskiy gosudarstvennyy universitet -- Depart-

Card 5/9

Critical Phenomena and Fluctuations

Sov/5469

ment of Experimental Physics, Dnepropetrovsk State University].
Investigation of Density Fluctuations in Ethor and Benzene
Based on X-Ray Scattering at Narrow Angles

81

Mokhov, N. V., and I. V. Kirsh [Department of Experimental
Physics, Dnepropetrovsk State University] Variation in the
Sizes of Concentration Fluctuations in Relationship to Tem-
perature and Concentration in Binary Liquid Systems Having
an Upper Critical Dissolving Temperature

89

Nosdrev, V. F., B. I. Kal'yanov and M. G. Shirkovich [Moskov-
skiy oblastnoy pedagogicheskoy institut -- Pedagogical Insti-
tute of the Moscow Oblast]. Hypersonic Investigation in
Organic Liquids at Constant Density in the Vicinity of the
Critical State

93

Rott, L. A. [Minskiy lesotekhnicheskoy institut -- Minsk
Forestry Engineering Institute]. Concerning the Diffusion in
the Critical Stratification Region

102

Card 6/9

30

SOV/5469

Critical Phenomena and Fluctuations

Roshchina, G. P. [Laboratoriya molekulyarnoy fiziki, Fizicheskii fakul'tet, Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko -- Laboratory of Molecular Physics, Division of Physics, Kiyev State University imeni T. G. Shevchenko] Investigation of Fluctuations in Solutions by the Method of Light Scattering 109

Skripov, V. P. [Laboratoriya molekulyarnoy fiziki, Ural'skiy politekhnicheskiy institut im. S. M. Kirova -- Laboratory of Molecular Physics, Ural Polytechnic Institute imeni S. M. Kirov]. Special Structural Features of Matter in the Vicinity of the Critical Point and Transfer Phenomena 117

Skripov, V. P., and Yu. D. Kolpakov [Laboratory of Molecular Physics, Ural Polytechnic Institute imeni S. M. Kirov, and the Laboratoriya teplofiziki, Ural'skiy filial AN SSSR -- Thermophysics Laboratory, Ural Branch, AS USSR]. Light Scattering in Carbon Dioxide along Pre- and Post-Critical Isotherms 126

Smirnov, B. A. [Institut neftekhimicheskogo sinteza AN SSSR -- Card 7/9

Critical Phenomena and Fluctuations

SOV/5469

Institute of Petrochemical Synthesis, AS USSR (Moscow)] Visual
Observations in the Critical Region

137

Fisher, I. Z., and V. K. Prokhorenko. Concerning the Fluct-
uations of Coordination Numbers in Liquids

142

Fisher, I. Z. [Belorusskiy Gosudarstvennyy Universitet -- Belo-
russian State University (Minsk)] Correlation Analysis of the
Critical Point

148

Shakhparonov, M. I. [Laboratory of the Physical Chemistry of Solu-
tions, Chemistry Division, Moscow State University imeni M. V.
Lomonosov]. Fluctuations in Solutions

151

Shimanskaya, Ye. T., and A. Z. Golik [Laboratory of Molecular
Physics, Physics Division, Kiev State University imeni T. G.
Shevchenko]. Investigation of the Critical State, Liquid-
Vapor, of Solutions by Tepler's Method

161

Card 8/9

30

Critical Phenomena and Fluctuations

SCV/5469

Shimanskaya, Ye. T., Yu. I. Shimanskiy, and A. Z. Golik [Laboratory of Molecular Physics, Division of Physics, Kiev State University imeni T. G. Shevchenko]. Investigation of the Critical State of Pure Substances by Tessler's Method

171

Resolution of the Conference on Critical Phenomena and Fluctuations in Solutions

189

AVAILABLE: Library of Congress (QD545.S73)

JP/dfk/jw
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Card 9/9

S/058/62/000/002/010/053
A058/A101

AUTHOR: Roshchina, G. P.

TITLE: Molecular light scattering in binary and ternary solutions of alcohols in acetone

PERIODICAL: Referativnyi zhurnal, Fizika, no. 2, 1962, 3-4, abstract 2019
("Visnik. Kiivs'k. un-tu", 1960, no. 3, ser. fiz. ta khimii, v. I, 94-98, Ukrainian, Russian summary)

TEXT: The effect of temperature concentration on the intensity of the isotropic and anisotropic parts of molecular light scattering was investigated in binary and ternary solutions of alcohols (ethyl and butyl) in acetone. It was found that there is no fluctuation in concentration in ethanol-butanol solutions, and such systems can belong to molecularly miscible systems. In butanol-acetone and ethanol-acetone solutions minor deviations from additivity in intensity of isotropic scattering are observed. It was found that in ternary solutions containing a relatively minor amount of acetone there are no fluctuations in concentration, and the properties of such systems are mainly due to interaction

Card 1/2

Molecular light scattering ...

S/058/62/000/002/010/053
A058/A101

between the ethanol and butanol. The behavior of ternary solutions with high acetone content is mainly due to interaction between the ethanol and acetone.

N. Voyshville

[Abstracter's note: Complete translation]

Card 2/2

S/058/61/000/010/061/100
A001/A101

AUTHOR: Roshchina, G.P.

TITLE: Investigation of fluctuations in solutions by the light scattering method

PERIODICAL: Referativnyy zhurnal.. Fizika, no. 10, 1961, 219, abstract 10D18 (V sb. "Kritich. yavleniya i fluktuatsii v rastvorakh", Moscow, AN SSSR, 1960, 109-116)

TEXT: The author shows that the analysis of experimental data on intensity of isotropic light scattering in solutions makes it possible to establish the qualitative correspondence between the shape of intensity isotherms and the type of solution. For molecular-miscible solutions, isotherms of intensity approach straight lines. The existence of molecular immiscibility, caused by differences in forces of intermolecular interaction and molecular sizes, leads to an increase in fluctuations of concentrations, which is manifested in curvature of isotherms of scattering intensity. Very sharp peaks in isotherms are observed in demixing solutions a little above the critical mixing temperature. An addition to such solutions of a third component, selected in a proper way, may lead to reduction of fluctuations.

L. Filippov

[Abstracter's note: Complete translation]
Card 1/1

S/185/60/005/001/017/018
A151/A029

AUTHOR: Roshchina, ^{6;} A.P.

TITLE: The 4th All-Union Conference on the Problems of the Liquid State of a Substance

PERIODICAL: Ukrayins'kyy Fizychnyy Zhurnal, 1960, Vol. 5, No. 1, pp. 125 - 130

TEXT: The IV Vsesoyuzna mizhvuzivs'ka narada z pytan' ridskoho stanu rechovyny (The 4th All-Union Inter-Higher Educational Institution Conference on the Problems of the Liquid State of a Substance) was convened by the Ministerstvo vyshchoyi osvity SRSR (Ministry of Higher Education of the USSR), the Ministerstvo vyshchoyi osvity URSR (Ministry of Higher Education of the UkrSSR) and the Kyyivs'kyy derzhavnyy universytet im. T.H. Shevchenka (Kiyev State University imeni T.H. Shevchenko) and took place at the Kiyev State University on June 1 - 4, 1959. A total of 50 reports were read. The conference was attended by physicists and physico-chemists from various higher educational institutions and scientific establishments of Moscow, Leningrad, Kiyev, Khar'kov, Odessa, Dnepropetrovsk, Saratov, I'vov, Minsk, Tallin, Alma-Ata, Baku, Samarkand and other cities of the Soviet Union. The following reports were read: I.Z. Fisher (Minsk): "The Present State of the Theory of Liquids". V.K. Prokhorenko and I.Z. Fisher (Minsk):

Card 1/6

S/185/60/005/001/017/018
A151/A029

The 4th All-Union Conference on the Problems of the Liquid State of a Substance

"Fluctuations of the Microstructure of Simple Liquids and Water". M.I. Shakhparanov (Moscow): "The Dielectric Constant and the Molecular Structure of Solutions". V.M. Aslanyan and M.V. Vol'kenshteyn (Leningrad): "Optical Activity and Intermolecular Reaction in a Liquid State". A.M. Yevseyev (Moscow): "Statistical Theory of Liquid Solutions". V.M. Chulanovs'kiy (Leningrad): "The Study of Structures of Non-Ideal Solutions by Spectral Methods". G.S. Denisov and V.M. Chulanovs'kiy (Leningrad): "The Spectral Investigation of the Reaction of the Ketone Carbonyl Group With Proto-Donor Molecules". M.O. Bulanin and D.N. Shchepkin (Leningrad): "The Investigation of the Intermolecular Reaction in Aliphatic Mercaptanes and Their Solutions With the Aid of Infrared Absorption Spectra". D.N. Shchepkin, M.O. Bulanin, H.S. Denisov and A.Ye. Semenova (Leningrad): "Spectral Methods of Determining the Balance Constant in Systems With a Hydrogen Bond". Ye.V. Shuvalova (Leningrad): "On the Spectral Determination of the Hydrogen Bond in Certain Alkynes". I.B. Rabinovich, Z.V. Volokhova and V.A. Gorbushenkov (Gor'kiy): "The Effect of the Replacement of Hydrogen by Deuterium on the Viscosity, Critical Temperature and Polarizability of Molecules". M.P. Vuks (Leningrad): "The Rotation Mobility of Molecules in Liquids and Solutions and Their Investigation With the Aid of Light Dispersion". A.V. Rakov (Moscow):

Card 2/6

S/185/60/005/001/017/018
A151/A029

The 4th All-Union Conference on the Problems of the Liquid State of a Substance

"The Effect of the Intermolecular Reaction on the Width of the Spectra of a Combination Scattering in Liquids". G.P. Roshchina (Kiyev): "The molecular Dispersion of Light and the Structure of Solutions". I.L. Fabelins'kiy and M.S. Pesin (Moscow): "The Fine Structure of the Molecular Light Dispersion Line and the Propagation of Hyper-Sound in Liquids". M.P. Lysytsya (Kiyev): "Intermolecular Reaction and the Fermi Resonance". M.V. Mokhov, I.V. Kirsh and Ya.M. Lobkovs'kiy (Dnepropetrovsk) read a report dealing with the investigation of fluctuations of the density and concentration carried out by means of an X-ray dispersion. I.I. Kondilenko and P.A. Korotkov (Kiyev): "On the Connection Between the Absorption Coefficient and the Intensity of Combination Scattering Lines With the Resonance Zone". O.Z. Golik and P.P. Cholpan (Kiyev): "The Structure, Viscosity and Compressibility of Certain Polysiloxanes". A.F. Skrishevs'kiy, V.P. Klochkov and Yu.V. Pasichnik (Kiyev) reported on the results of an investigation into the structure of liquid methyl- and ethylsiloxanes with linear and cyclic molecules carried out by means of an X-ray dispersion. M.I. Usanovich and A.D. Dembits'kiy (Alma-Ata): "The Vapor-Pressure of Certain Systems With a Chemical Reaction". T.N. Sumarokova (Alma-Ata) reported on the application limits of the laws of ideal solutions. N.H. Bakhshiyev and B.S. Neporent (Leningrad): "Spec-

Card 3/6

S/185/60/005/001/017/018
A151/A029

The 4th All-Union Conference on the Problems of the Liquid State of a Substance

troscopic Investigations of the Internal Field in Solutions". A.Yu. Glauberman (L'vov): "On Higher Approximation in a New Form of the Plasma Expansions". O. Ya. Samoylov (Moscow): "The Coordination Number and the Translation Motion of Particles in Aqueous Solutions of Electrolytes". I.H. Mikhaylov and Yu.P. Sirnikov (Leningrad): "The Compressibility of Electrolyte Solutions and Certain Questions on the Theory of These Solutions". M.U. Bilyy and B.F. Rud'ko (Kiyev): "Temperature Investigation of the Luminescence of the Congealed Solutions of Heavy Metals". O.B. Ptitsyn and Yu.Ye. Eyzner (Leningrad) reported on the effect of the reaction with the solvent on the properties of macromolecules in the solution. M.V. Vol'kenshteyn and Yu.A. Sharonov (Leningrad): "An Investigation of the Softening of Polymer Glasses by Means of Measuring the Thermal Capacity". E.V. Anufriyeva and M.V. Vol'kenshteyn (Leningrad): "The Investigation of the Mobility of Macromolecules in a Solution and a Block by Means of the Luminescence Method". V.N. Nikitin and B.Z. Volchek (Leningrad) reported an information on the results obtained when investigating the infrared absorption spectra which characterize the hydrogen bond in polyamides. I.F. Klassen and O.Z. Holyk (Kiyev) reported results of an investigation into the viscosity, density and electroconductivity of zinc and cadmium amalgams, which was carried out in order to

Card 4/6

S/185/60/005/001/017/018

A151/A029

The 4th All-Union Conference on the Problems of the Liquid State of a Substance

establish the connection of these properties with the structure of the solutions. N.V. Alekseyev, Ya.I. Gerasymov and A.M. Yevseyev (Moscow) reported the results of an electronographic investigation of the structure of liquid alloys of Cd-Sn and Bi-Sn. O.S. Lashko (Kiyev) reported the results of a roentgenographic investigation into the structure of the liquid 50-% alloy of Au-Sn which, when being in a solid state, forms an intermetallic compound. O.S. Lashko and A.V. Romanov (Kiyev) reported the results of a roentgenographic investigation into the Pb-Sn system conducted within a wide concentration range. Ya.I. Herasymov, A.V. Nikol'skaya and A.M. Yevseyeva (Moscow) reported results of a study of the thermodynamic properties of a large quantity of liquid metallic systems conducted by measuring the electromotive force and by determining the pressure of saturated vapor. M.L. Pokrovs'kiy and D.S. Tissen (Moscow) reported results of an investigation into the effect of metallic admixtures on the surface tension and, the kinetics of the crystallization of tin. Yu.P. Blagoy and M.S. Rudenko (Khar'kov) reported results of an investigation into the surface tension of the solution of liquid gases N_2 -Ar, N_2 - CH_4 , Ar- CH_4 carried out within the temperature range from the boiling temperature of pure components to freezing temperature and the determination of the absorption value. V.H. Manzheliy (Khar'kov) reported the

Card 5/6

S/185/60/005/001/017/018
A151/A029

The 4th All-Union Conference on the Problems of the Liquid State of a Substance

results of an investigation into the diffusion phenomenon in liquids with a large molar volume. M.M. Bagrov and D.H. Dolgoplov (Khar'kov): "The Investigation Into the Phenomenon of Diffusion in Liquid Gases". M.M. Gerasymova (Tallin): "On the Problem of the Viscosity of Compressed Gases and Liquids". S.S. Urazov-s'kiy (Khar'kov): "On the Peculiarities in the Temperature Dependence of the Properties of Liquids and Solutions". A.Ye.Luts'kiy and A.N. Panova (Khar'kov) reported results of an investigation into the true thermal capacity of nitrobenzene, phenol, anisole, ortho-, metha- and para-nitrophenols and nitro-anisoles within the temperature range from the boiling points to $\sim 140^{\circ}\text{C}$. G.M. Martinkevych (Moscow): "On the Connection of the Structural Units of Vapor With the Structural Units of the Liquid and the Solid Body". V.K. Semenchenko and K.V. Arkhangels'kiy (Moscow): "Pielectric Constant and the Losses in the Critical Field of the Stratification of Binary Liquid Systems". V.K. Semenchenko (Moscow): "An Investigation Into Critical Phenomena". It has been decided to publish the works of the conference and to prepare the next All-Union Conference on the Problems of the Liquid State of a Substance. The conference is planned for the spring of 1960 and will be held also in Kiev. An organizational committee was elected, the task of which is to prepare and conduct this conference.

Card 6/6

ROSHCHINA, G.P. [Roshchyna, H.P.]; KARAMARENKO, A.V.

Relation between the concentration scattering of light and the parameters characterizing the microstructure of a solution. Ukr. fiz. zhur. 7 no.9:1024-1027 S '62. (MIRA 15:12)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.
(Light-Scattering) (Solution (Chemistry))

ROSHCHINA, Galina Petrovna; GOLIK, A.Z., prof., otv. red.; RYZHKO,
V.P., red.; KHOZ'ANOVSKAYA, T.I., tekhn. red.

[Molecular scattering of light in gases] Molekuliarnoe ras-
seianie sveta v gazakh. Kiev, Izd-vo Kievskogo univ., 1962.

37 p.

(MIRA 15:11)

(Raman effect) (Scattering (Physics)) (Light--Scattering)

ROSHCHINA, G.P.; ISHCENKO, E.D.

Use of the method of light scattering in studying fluctuations
in certain nonelectrolyte solutions. Ukr.fiz.zhur. 7 no.7:751-
760 J1 '62. (MIRA 15:12)

1. Kiyevskiy universitet.
(Light—Scattering) (Liquids)

GOLIK, A.Z., prof., otv. red.; ROSHCHINA, G.P., dots., otv. red.;
MIRONETS, Ye.M., red.; KHOKHANOVSKAYA, T.I., tekhn. red.

[Structure and physical properties of matter in the liquid
state; materials] Stroenie i fizicheskie svoistva veshche-
stva v zhidkom sostoianii; materialy. Kiev, Izd-vo Kievskogo
univ., 1962. 146 p. (MIRA 15:9)

1. Soveshchaniye posvyashchennoye probleme zhidkogo sostoyaniya
veshchestva. 4th, Kiev, 1959. (Liquids)

GOLIK, A.Z., prof., otv. red.; ROSHCHINA, G.P., dots., otv. red.;
MIRONETS, Ye.M., red.; KHOKLANOVSKAYA, T.I., tekhn.red.

[Structure and physical properties of matter in the liquid
state; materials] Stroenie i fizicheskie svoistva veshchestva
v zhidkom sostoianii; materialy. Kiev, Izd-vo Kievskogo univ.,
1962. 146 p. (MIRA 15:9)

1. Soveshchaniye posvyashchennoye probleme zhidkogo sostoyaniya
veshchestva. 4th, Kiev, 1959.

(Liquids)

ROSHCHINA, G.P.

STRUCTURE AND PHYSICAL PROPERTIES OF MATTER IN A LIQUID STATE
reports read at the 14th Conference convened in KIEV from 1 to 15 June
1959, published by the publisher House of KIEV University, KIEV,
USSR, 1962

Preface	3
M.I. SHKHIPARONOV, Dielectric Permeability and Molecular Structure of Solutions	4
M.I. VUKA, On the Connection Between the Rotary Mobility of Molecules and Viscosity	11
M.S. PEGIN and I.I. FABELINSKIY, Fine Structure of the Molecular Light Scatter Line and the Propagation of Ultrasound in Liquids	15
A.V. RAKOV, Effect of Intermolecular Interaction on the Line Width of the Combination-Scatter Spectra in Liquids	20
G.P. ROSCHINA, A.S. KAUCOVA, I.D. BUSHUYEVA and T.G. POPLAVATSKAYA, Light-Scatter Investigation of the Fluctuations in Alcohol-aqueous and Acetone-aqueous Solutions	23
V.V. BABINOVICH, Isotope Effect in the Viscosity of Deutero- compounds	32
N.G. BAKHSHIYEV and B.S. SHCHERNT, Spectroscopic Investiga- tion of the Internal Field in Solutions	45
A.P. SKRYSHNEVSKIY, V.P. KLOCHKOV and YU.V. PASECHNIK, Roentgenographic Investigation of the Structure of Some Liquid Silicon- organic Compounds	50

ISHCHENKO, E.D.; ROSHCHINA, G.P. [Roshchyna, H.P.]

Structure of liquid systems with a eutectic diagram of state. Part 2.
Adiabatic compressibility of and speed of ultrasound in liquid binary
systems with a simple eutectic diagram of state. Ukr. fiz. zhur. 8
no.11:1250-1256 '63. (MIRA 17:10)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

ISHCHENKO, M.D.; ROSHCHINA, G.P. [Roshchyna, M.P.]

Structure of liquid systems with a eutectic diagram of state.

Part 1: Density of liquid binary systems with a eutectic diagram
of state. Ukr. fiz. zhur. 8 no.11:1241-1249 N '64. (MIRA 17:9)

1. Kiyevskiy gosudarstvennyy universitet im. Shevchenko.

L 23684-66 EWT(1)/EWT(m)/EPF(n)-2/T/EWP(t)/ETC(m)-6 IJP(c) JD/WW/JG/GG

ACC NR: AR6005206

SOURCE CODE: UR/0058/65/000/009/EO07/EO07

SOURCE: Ref. zh. Fizika, Abs. 9E62

AUTHORS: Roshchina, G. P.; Ishchenko, E. D.

TITLE: Investigation of the structure of liquid systems with eutectic diagrams of state

REF SOURCE: Uch. zap. Mosk. obl. ped. in-ta, v. 147, 1964, 231-239

TOPIC TAGS: equation of state, phase diagram, melting point, fluid density

TRANSLATION: In liquid systems with eutectic diagrams of state near the melting points, both for solutions of eutectic concentrations and for certain solutions of non-eutectic concentrations, there occur relatively small concentration fluctuations, considerably smaller than in melting systems near the stratification temperature. With increase in temperature and with increasing distance from the melting point, the fluctuations of the concentration gradually die out.

SUB CODE: 20

Card 1/1

L 9557-66 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) MJW/JD/HW
ACC NR: AP5026362 SOURCE CODE: UR/0370/65/000/005/0143/0148

AUTHOR: ^{44,55}Braslavskiy, D. I. (Moscow); ^{44,55}Kishkin, S. T. (Moscow); ^{44,55}Polyak, E. V. (Moscow);
^{44,55}Roshchina, I. N. (Moscow); ^{44,55}Solov'yeva, G. G. (Moscow); ^{44,55}Cherkis, Yu. Yu. (Moscow)

ORG: none

TITLE: Thermomechanical treatment of heat-resistant martensitic steel

SOURCE: AN SSSR Izvestiya. Metally, no. 5, 1965, 143-148

TOPIC TAGS: steel, heat resistant steel, ^{44,55}martensitic steel, mechanical heat treatment, plastic deformation, yield stress, tensile stress /EI961 steel

ABSTRACT: Heat-resistant EI961 steel (0.14% carbon, 10.8% chromium, 1.75% nickel, 1.65% tungsten, and 0.26% vanadium) has been tested for the effect of thermomechanical treatment (TMT). Three variants of TMT were used: 1) high-temperature thermomechanical treatment (HTMT) — plastic deformation at 900—1050C followed by cooling; 2) low-temperature thermomechanical treatment (LTMT) — austenitizing at 100C, cooling to 600C, plastic deformation, and cooling; and 3) combined high- and low-temperature treatment (HLTMT) — plastic deformation at 1050C, cooling, tempering at 580C for 3 hr, plastic deformation at 600C, and cooling. Preliminary experiments showed that optimum reductions for HTMT or LTMT are 20—30% and for HLTMT, 50% at 1050C and 7—10% at 600C. All three variants of TMT considerably improved strength and heat resistance without a significant decrease in ductility. The room-temperature tensile and yield

Card 1/3

UDC: 669.14-157.9

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ACC NR: AP5026362

strengths of steel subjected to HTMT, LTMT, and HLTMT increased to 117 and 106 kg/mm², 132 and 114 kg/mm², and 133 and 118 kg/mm², respectively (compared to 108 and 92 kg/mm² for conventionally treated steel). Corresponding figures for rupture life at 500C under a stress of 58 kg/mm² were 270, 206, and 222hr (compared to 149 hr for conventionally treated steel). The strengthening effect of HTMT was not annihilated by aging for 100 hr at temperatures up to 550C; that of LTMT was annihilated for the most part by aging at 500C (see Fig. 1). When applied under optimum conditions to ac-

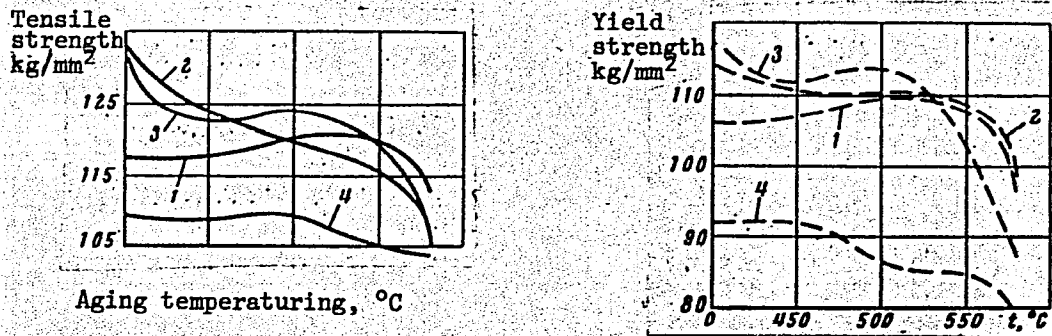


Fig. 1. Effect of 100-hr aging at various temperatures on the tensile and yield strengths of EI961 steel subjected to HTMT (1), LTMT (2), HLTMT (3), and conventional treatment (4)

Card 2/3

L 9557-66

ACC NR: AP5026362

0

tual parts, with the plastic deformation done by die forging, HTMT and HLTMT increased the 100-hr rupture strength at 500C to 62 and 63 kg/mm² (from 57 kg/mm² for conventionally treated steel) and the fatigue strength at 500C, to 46 and 53 kg/mm² (from 35 kg/mm² for conventionally treated steel), respectively. HTMT can be used for parts operating at temperatures up to 550C and HLTMT, for parts operating at temperatures up to 500C. LTMT is not recommended for parts operating at elevated temperatures. Orig. art. has: 2 figures and 3 tables. [DV]

SUB CODE: 11, 20/ SUBM DATE: 06May65/ ORIG REF: 002/ ATD PRESS: 4150

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Card 3/3

Roshchina, I.N.

AID Nr. 979-2 29 May

AUSFORMING OF STRUCTURAL STEELS (USSR)

Pevzner, I. M., I. N. Roshchina, T. D. Kubyshkina, and L. V. Zaslavskaya.
Metallovedeniye i termicheskaya obrabotka metallov, no. 4, Apr 1963, 13-20.

S/129/63/000/004/004/014

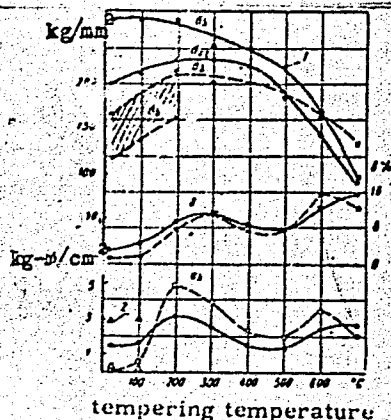
The effect of the low-temperature thermomechanical treatment "ausforming" on the structure, phase composition, and mechanical properties of low-alloy structural steels containing 0.47-0.58% C, 1.67-1.97% Cr, 2.15-2.44% Ni, 0.80-1.12% W, 0.40-0.46% Mo, and 0.9-0.28% V has been studied. Test specimens 90 x 35 x 22 mm, enclosed in 1X18H9T steel [AISI 321] envelopes, were austenitized at

Card 1/3

AID Nr. 979-2 29 May

AUSFORMING OF STRUCTURAL STEELS [Cont'd]

S/129/63/000/004/004/014



1 - 0.58% C; 2 - 0.47% C.

— ausformed

---- conventionally hardened

1000°C, cooled to 500-530°C in a saltpeter bath, rolled at this temperature in several passes with a total reduction of 90%, oil quenched, and tempered at 100-550°C for 3 hrs or at 600-700°C for 1 hr. The maximum effect of ausforming, compared with conventional hardening, was observed in steels, as quenched or tempered at 100°C [see illustration]. The optimum combination of strength and ductility was obtained in a steel containing 0.48% C, 1.15% Mn, 1.60% Si, 1.97% Cr, 2.15% Ni, 1.12% W, 0.45% Mo, and 0.28% V, which after tempering at 100°C

Card 2/3

AID Nr. 979-2 29 May

AUSFORMING OF STRUCTURAL STEELS [Cont'd]

S/129/63/000/004/004/011

had a tensile strength $\sigma_b = 280$ -
290 kg/mm² and impact strength

$a_k = 3$ kg-m/cm². With an increase in C content to 0.58%, a_k decreased to 1.5-2 kg-m/cm². With tempering at 200 to 600°C, the advantages of austempering over conventional hardening become less pronounced; e.g., the impact strength of ausformed steel drops even below that of conventionally hardened steel. Ausforming brings about considerable anisotropy of mechanical properties and structure: the tensile strength of transverse specimens is considerably higher and the ductility considerably lower than those of longitudinal specimens. Crystals of ausformed martensite shaped like small plates parallel to the sheet plane were found to be oriented in the direction of rolling. X-ray diffraction patterns showed that the substructure, too, becomes anisotropic as a result of ausforming; the martensite blocks of coherent spattering acquire the shape of flakes parallel to the sheet plane and has a thickness only $\sim 1/3$ that of conventional martensite. No difference in phase composition between ausformed and conventionally hardened steels was found. Ausformed martensite at temperatures up to 500-550°C appears to be more stable than martensite of conventionally hardened steel; tempering of the former proceeds at a lower rate than that of the latter. At temperatures over 550°C the opposite is true.

[MS]
Card 3/3

22545

S/129/61/000/005/001/003
E111/E152

11/10
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TITLE: Thermal-mechanical treatment of steel to give high strength

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov,
1961, No.5, pp. 2-9

TEXT: The authors point out that recently much attention has been given to combined mechanical and heat treatment, by two possible methods. In one method the steel is rapidly deformed in the austenite-stable temperature range and quenched. While this improves the steel in many ways it fails to increase tensile strength. In the second method the steel is deformed at a temperature between the martensite point M_d and the recrystallization temperature, and quenched. This gives increased strength with satisfactory plasticity. Results of thermal-mechanical
Card 1/8.5

22545

S/129/61/000/005/001/003

E111/E152

Thermal-mechanical treatment of steel to give high strength treatment are not universally successful, and there are no reliable data on the practical use of the "ausform" or "ausforming" treatment widely advertised in the USA. The object of the present work was the study of thermal-mechanical treatment of alloy structural steels to a high strength and the structure produced by the treatment. The composition of the steels was as shown in Table 1, steels A-Г being melted in induction and Д and E in arc furnaces: the first group were austenitized at 1000, the second at 900 °C. After cooling in a nitrate bath to the deformation temperature the steels were rolled in 4-5 passes (reduction 90%), oil-quenched and tempered. To reduce cooling the work was reheated between passes and other measures taken, e.g. rolls were preheated to 100 °C. A portable magnetic instrument (developed by G.Yu. Sila-Novitskiy and T.D. Kubyshkina) was used to detect isothermal-decomposition products: if found, the specimen was rejected. After treatment specimens had a hardness R_c of 58-64 and mechanical-test pieces were prepared by spark machining and removal by grinding (temperature kept below 100 °C)

Card 2/8

22545

S/129/61/000/005/001/003

E111/E152

Thermal-mechanical treatment of steel to give high strength of a 0.5 mm deep surface layer. Fig.2 shows tensile strength kg/mm² and relative elongation as functions of carbon content for steels A, B, Λ and E after treatment (90% deformation at 550 °C, 4 hours tempering at 100 °C); for steel A tempering at 100 and 200 °C is shown by points 1 and 2 respectively, steels E and Λ indicated by point 3. Fig.3 shows for steel Λ tensile strength and elongation in relation to the 90% deformation temperature (tempering at 100 °C). The effect of variation in austenitization temperature with 90% deformation and tempering at 100 °C of steel A on tensile strength, Rockwell hardness and elongation is shown in Fig.4. Fig.5 shows the effect of tempering temperature on these properties of the normally thermomechanically treated alloys B and Γ (left- and right-hand graphs respectively). The treatment enabled a tensile strength of 280-300 kg/mm² and elongation of 6% to be obtained for the steels tested, which is better than with ordinary or stepwise hardening followed by low-temperature tempering. As carbon content rises to about 0.5% strength of thermomechanically treated steels rises, and falls with higher

Card 3/8, 5

22545
S/129/61/000/005/001/003
E111/E152

Thermal-mechanical treatment of steel to give high strength
C content due to semi-brittle or brittle fracture. The best strength/plasticity combination was obtained with tempering at 100 °C. In some experiments on steel 6 the deformation was decreased to 50%; the results were less favourable than with the 90% deformation as regards strength, but gave high plasticity. The advantage of 50% deformation is that it can be effected at relatively high temperatures, even above the recrystallization temperature. Bend tests on 60 x 10 x 2 mm plates of steel 6 heated in various ways were also carried out. Electron-microscopic study of the fine structure of thermomechanically treated steel A showed a pronounced texture and considerable refinement of martensite plates. X-ray diffraction by rotating specimens was also studied (with a JFC-50A (URS-50I) ionization apparatus with automatic recording of intensity distribution in FeK_{α} radiation); block size of the thermomechanically treated steel was one half to one quarter that obtained with ordinary hardening. The authors conclude that structure refinement is one factor in the effectiveness of the treatment.
Card 4/ 8 5

22545

S/129/61/000/005/001/003

E111/E152

Thermal-mechanical treatment of steel to give high strength

V.V. Chugunov, K.S. Medvedeva, G.G. Solov'yeva, Ye.G. Filippova, T.D. Kubyshkina, V.V. Bol'shakova and Yu.N. Kabanov participated in the work.

There are 3 figures, 4 tables and 21 references: 13 Soviet and 8 English. The four latest English language references read:

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Card 5/85

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Treatment of cardiac insufficiency with glucose. Klin.med.
36 no.8:144-148 Ag '58 (MIRA 11:9)

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Orenburgskogo meditsinskogo instituta.

(CARDIAC GLYCOSIDES, ther. use

congestive heart failure, with glucose (Rus))

(GLUCOSE, ther. use.

congestive heart failure, with cardiac glycosides
(Rus))

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Stimulation of labor activity. Akush.i gin. no.5:109 '61.

(MIRA 15:1)

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With the hands of youth. Prom.koop. no.5:12-13 My '57.
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VATOLINA, Lidiya Nikolayevna. Prinimal uchastiye GASHEV, B.N.
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1962. 77 p. (MIRA 15:4)
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ROSHCHINA, L.F.

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S-0 '58

1. Iz laboratorii vysshey nervnoy deyatel'nosti (zav. - prof. A.I. Makarychev) Instituta pitaniya AMN SSSR, Moskva.
(HYPERTENSION, exper.

eff. of dietary sodium chloride in various quantities on CNS & blood pressure in dogs (Rus))
(CENTRAL NERVOUS SYSTEM, eff. of drugs on dietary sodium chloride in various quantities in hypertensive dogs (Rus))

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Influence of neurotropic substances on the cortical activity and
blood pressure of dogs in experimental hypertension. Zhur.vys.nerv.
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(HYPERTENSION exper.)
(BROMINE pharmacol.)
(CAFFEINE pharmacol.)
(CEREBRAL CORTEX pharmacol.)

LEVITSKIY, L.M.; MAKARYCHEV, A.I.; ROSHCINA, L.F.

Dietotherapy in obesity and its relation to cortical dynamics.
Zhur.ob.biol. 20 no.2:11-19 Mr-Apr '59. (MIRA 12:5)

1. Iz laboratorii vysshey nervnoy deyatel'nosti (zav. - prof.
A.I.Makarychev) Instituta pitaniya AMN SSSR, Moskva.

(REFLEX, CONDITIONED,

determ. of cortical reactions to dietother. of
obesity (Rus))

(DIETS, in var. dis.

obesity, conditioned reflex determ. of cortical
reaction (Rus))

(OBESITY, ther.

diets, conditioned reflex determ. of cortical
reaction (Rus))

LEVITSKIY, L.M.; MAKARYCHEV, A.I.; ROSHCHINA, L.F.

Dynamics of cortical activity in patients with obesity in relation to the degree and form of the disease. Vop.pit. 19 no.1:16-21
Ja-F '60. (MIRA 13:5)

1. Iz Instituta pitaniya AMN SSSR, Moskva.
(OBESITY physiology)
(CEREBRAL CORTEX physiology)

ACC NR: AP6023942

(A,N)

SOURCE CODE: UR/0390/66/029/003/0267/0270

AUTHOR: Arutyunyan, G. S.; Roshchina, L. F.

ORG: Pharmacology Laboratory [Head -- Corresponding member AMN SSSR
Professor M. D. Mashkovskiy] All-Union Scientific Research Chemical-
Pharmaceutical Institute (Laboratoriya farmakologii vsesoyuznogo nauchno-issle-
dovatel'skogo khimiko-farmatsevticheskogo instituta im. S. Ordzhonikidze, Moscow)

TITLE: Action of mexamine on conditioned-reflex activity in rabbits and rats

SOURCE: Farmakologiya i toksikologiya, v. 29, no. 3, 1966, 267-270

TOPIC TAGS: drug, drug effect, conditioned reflex, cortical activity, inhibitory
effect

ABSTRACT:

The effects of mexamine (5-methoxytryptamine) and serotonin (5-hydroxytrypt-
amine) on food procurement reflexes in rabbits and rats were studied.
Mexamine in small doses interrupts the conditioned reflex and in large doses
inhibits cortical activity, whereas serotonin has little or no effect.

[W.A. 50; CBE No. 10]

SUB CODE: 06/ SUBM DATE: 12Mar65/ ORIG REF: 005/ OTH REF: 008/

UDC: 615.711.44-017.8+612.825.1.014.46

Card 1/1

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Pharmacological properties of melatonin. Farm. i toks. 26
no.6:650-655 N-D '63 (MIRA 18:2)

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Effect of table salt on the higher nervous activity in healthy
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Effect of prolonged nutrition with sunflower oil on the course of experimental hypertension. Vop. pit. 21 no.2:11-16 Mr-Apr '62.

1. Iz laboratorii vysshey nervnoy deyatel'nosti (zav. - prof. A.I. Makarychev [deceased]) i laboratorii obmena veshchestv (zav. chlen-korrespondent AMN SSSR prof. O.P. Molchanova) Institut pitaniya AMN SSSR, Moskva.

(HYPERTENSION)
(SUNFLOWER SEED OIL)

MAKAROV, Valentin Vasil'yevich; ROSHCHINA, L., red.; MOSKVINA, R.,
tekhn. red

[Nigeria; a sketch of the economy]Nigeria; ekonomicheskii
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(Nigeria--Economic conditions)